

CLAIMS

1. A method of producing a liquid crystal display,
which comprises ejecting spacer particle dispersion
5 obtainable by dispersing a spacer particle by an ink-jet
apparatus, and setting a substrate having a spacer particle
arranged in the light shielding region of a substrate with
a pixel formed or in the region corresponding to the light
shielding region of another substrate with no pixel formed
10 and the other substrate having no spacer particle arranged
on the opposite sides via a spacer particle arranged in the
light shielding region or the region corresponding to the
light shielding region in a liquid crystal display
comprising a pixel region arranged in a prescribed pattern
15 and a light shielding region defining the pixel region, the
spacer particle in the spacer particle dispersion being
subjected to electrostatic charge treatment and the light
shielding region or the region corresponding to the light
shielding region of the substrate being entirely or
20 partially electrostatically charged with electric charge
relatively opposite to that of the spacer particle.

2. The method of producing a liquid crystal display
according to claim 1,
25 wherein a wiring material made of a material capable
of being electrostatically charged exists in the light
shielding region or the region corresponding to the light
shielding region of the substrate.

3. The method of producing a liquid crystal display
according to the claim 2,
30 wherein the wiring material capable of being
electrostatically charged is electrostatically charged with
electric charge opposite to that of the spacer particle
35 subjected to electrostatic charge treatment.

4. The method of producing a liquid crystal display according to claim 1,

5 which comprises ejecting a charged ink obtainable by
dissolving a charged substance or dispersing a charged
substance with a particle diameter 1 μm or less to the
light shielding region or the region corresponding to the
light shielding region by an ink-jet manner and drying the
charged ink, and then the spacer particle dispersion
10 obtainable by dispersing the spacer particle subjected to
electrostatic charge treatment being deposited to a portion
including the position of the ejected and dried charged ink.

5. The method of producing a liquid crystal display
15 according to claim 4,

wherein the liquid amount of the charged ink ejected
by one ejection is controlled to be 10 pL or less at the
time of ejecting the charged ink by an ink-jet manner.

20 6. The method of producing a liquid crystal display
according to claim 4 or 5,

wherein the electric charge of the charged ink and
the electric charge of the spacer particle subjected to
electrostatic treatment are opposite to each other.

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7. A method of producing a liquid crystal display,
which comprises ejecting spacer particle dispersion
obtainable by dispersing a spacer particle by an ink-jet
apparatus, and setting a substrate having a spacer particle
30 arranged in the light shielding region of a substrate with
a pixel formed or in the region corresponding to the light
shielding region of another substrate with no pixel formed
and the other substrate having no spacer particle arranged
on the opposite sides via a spacer particle arranged in the
35 light shielding region or the region corresponding to the

light shielding region in a liquid crystal display comprising a pixel region arranged in a prescribed pattern and a light shielding region defining the pixel region, the reducing contact angle (θ_r) of the spacer particle dispersion to the substrate, the spacer particle dispersion being ejected to, being 5° or more.

8. The method of producing a liquid crystal display according to claim 7,
10 wherein the spacer particle dispersion contains at least one kind of organic solvents, and the reducing contact angle (θ_r) of the spacer particle dispersion of the organic solvent with the highest boiling point among the organic solvents to the substrate, the spacer particle
15 dispersion being ejected to, is 5° or more.

9. The method of producing a liquid crystal display according to claim 7 or 8,
wherein a portion having a low energy surface is
20 formed in the light shielding region or the region corresponding to the light shielding region of at least one substrate.

10. A method of producing a liquid crystal display,
25 which comprises ejecting spacer particle dispersion obtainable by dispersing a spacer particle by an ink-jet apparatus, and setting a substrate having a spacer particle arranged in the light shielding region of a substrate with a pixel formed or in the region corresponding to the light
30 shielding region of another substrate with no pixel formed and the other substrate having no spacer particle arranged on the opposite sides via a spacer particle arranged in the light shielding region or the region corresponding to the light shielding region in a liquid crystal display
35 comprising a pixel region arranged in a prescribed pattern

and a light shielding region defining the pixel region, a droplet of the spacer particle dispersion being deposited in a portion having a low energy surface formed in the light shielding region or the region corresponding to the light shielding region of at least one substrate, the
5 droplet of the spacer particle dispersion being dried to keep the spacer particle in the light shielding region or the region corresponding to the light shielding region.

10 11. The method of producing a liquid crystal display according to claim 10,

wherein a surface energy of the portion having the low energy surface is 45 mN/m or less.

15 12. The method of producing a liquid crystal display according to claim 10 or 11,

wherein the portion having the low energy surface is formed by an oriented film.

20 13. A method of producing a liquid crystal display, which comprises ejecting spacer particle dispersion obtainable by dispersing a spacer particle by an ink-jet apparatus, and setting a substrate having a spacer particle arranged in the light shielding region of a substrate with
25 a pixel formed or in the region corresponding to the light shielding region of another substrate with no pixel formed and the other substrate having no spacer particle arranged on the opposite sides via a spacer particle arranged in the light shielding region or the region corresponding to the
30 light shielding region in a liquid crystal display comprising a pixel region arranged in a prescribed pattern and a light shielding region defining the pixel region, a droplet of the spacer particle dispersion being deposited to include a portion different in level formed in the
35 region corresponding to the light shielding region of at

least one substrate, and being dried to keep the spacer particle in the region corresponding to the light shielding region.

- 5 14. The method of producing a liquid crystal display according to claim 13,

 wherein the height difference of the portion different in level, the spacer particle dispersion being deposited to, is within $0.01 < |B| < 0.95D$, in the case D

- 10 (μm) represents a particle diameter of the spacer particle and B (μm) represents the height difference of the portion different in level.